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EXAMINER

LEE, DANIEL H.

ART UNIT	PAPER NUMBER
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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,022	Applicant(s) HEEP ET AL.	
	Examiner DANIEL LEE	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20061006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2, 12 and 13 rejected under 35 U.S.C. 102(b) as being anticipated by Shisko (US 5520777).

3. Regarding claims 2, 12, and 13, Shisko discloses a method of manufacturing fiberboard. It is known to manufacture board products by consolidating or joining refined lignocellulosic fibers using a chemical binder, pressure and heat (col. 1, lines 14-16). Typical binders are thermosetting resins such as urea-formaldehyde, phenol-formaldehyde, resorcinol-formaldehyde, condensed furfuryl alcohol resins or organic polyisocyanates (col. 1, lines 16-19). Shisko teaches that after forming, the mat sections are conveyed to a hot press of any conventional design. Typically, the press will be operated at a temperature from 180-250 deg. C (col. 4, lines 39-42). The partially cured board products are conveyed from the hot press in transportable containers to a post-heating oven where the boards are heat treated for one half - eight

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hours at approximately 120 - 260 deg. C (col. 4, lines 53-57). The fully cured boards from the oven may then be humidified (col. 4, lines 59-60).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 3, 5-6, and 9-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Shisko as applied to claims 2, 12, and 13 above.

7. Regarding claims 1 and 3, Shisko is applied as in the 102 rejection above.

Shisko does not expressly teach the wood body is pressed in the second stage.

However, it is known to form board products using a chemical binder, pressure, and

heat as discussed above. Further, Shisko uses a hot press to partially cure the board.

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Therefore, it would have been within the scope of Shisko to press the board in the second stage as well to accelerate the curing of the board.

8. Regarding claims 5 and 6, Shisko teaches UF, PF, and organic polyisocyanates, among other binders as discussed above (col. 1, lines 16-19).

9. Regarding claims 9-11, Shisko teaches thermosetting resins but does not expressly state whether they are in liquid or powder form. One of ordinary skill in the art would appreciate that the resins can be in powder form and when mixed with water can also be in liquid form.

10. Claims 1-3, 5-6 and 9-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Reif (US 6582648).

11. Regarding claims 1-3 and 12-13, Reif discloses a method for manufacturing moulded bodies from crushed material and a binder hardenable by electron radiation. Reif teaches a two-stage hardening in which there is a thermal part-hardening or first hardening and a second stage in which there is complete hardening or polymerisation of the binder (col. 5, see lines 7-50). The thermal first hardening, in this case, can take place at a comparatively lower temperature (col. 5, lines 17-20). Reif does not expressly teach using pressure in the second stage. However, Reif makes it clear that there are clear advantages to a two-stage hardening process and that curing or hardening can be effected by any of heat, pressure, and radiation. Therefore, it would be within the scope of Reif to apply pressure as part of the hardening process since this is a means to arrive at complete hardening of the product.

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12. Regarding claims 5-6, Reif discloses thermally hardenable binders such as urea-formaldehyde resin, melamine-formaldehyde resin, isocyanate, phenol-formaldehyde resin, among others (col. 1, lines 19-21).

13. Regarding claims 9-11, Reif teaches thermally hardenable binders (col. 1, lines 19-21) but does not expressly state whether they are in liquid or powder form. One of ordinary skill in the art would appreciate that the resins can be in powder form and when mixed with water can also be in liquid form.

14. Claims 7-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Shisko as applied to claims 1-3, 5-6 and 9-13 above, and further in view of Fremont et al. ("Fremont", US 3969459).

15. Regarding claims 7-8, Shisko teaches that pressure and heat are used to effect curing of binding agents but does not expressly disclose the specific temperatures and pressures required in claims 7-8.

16. Fremont discloses fiberboard manufacture that is carried out in two stages, the first of which occurs at 180 to 210 deg. F (82.2 to 98.9 deg. C) and about 200 to 1000 psi (13.8 to 68.9 bar) and the second at 350 to 550 deg. F (176.7 to 287.8 deg. C) and 200 to 500 psi (13.8 to 34.5 bar) (see col. 2, line 31 to col. 3, line 31), which would fall within the limitations of claims 7 and 8.

17. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the temperatures and pressures disclosed by Fremont in a two-stage

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process to adjust the temperature and moisture content of the product and to render the ligneous (or woody) material plastic, as taught by Fremont (col. 2, lines 31-50).

18. Claims 7-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Reif as applied to claims 1-3, 5-6 and 9-13 above, and further in view of Fremont.

19. Regarding claims 7-8, Reif teaches that pressure and heat are used to effect curing of binding agents but does not expressly disclose the specific temperatures and pressures required in claims 7-8.

20. Fremont discloses fiberboard manufacture that is carried out in two stages, the first of which occurs at 180 to 210 deg. F (82.2 to 98.9 deg. C) and about 200 to 1000 psi (13.8 to 68.9 bar) and the second at 350 to 550 deg. F (176.7 to 287.8 deg. C) and 200 to 500 psi (13.8 to 34.5 bar) (see col. 2, line 31 to col. 3, line 31), which would fall within the limitations of claims 7 and 8.

21. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the temperatures and pressures disclosed by Fremont in a two-stage process to adjust the temperature and moisture content of the product and to render the ligneous (or woody) material plastic, as taught by Fremont (col. 2, lines 31-50).

22. Claims 9-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Shisko as applied to claims 1-3, 5-6, and 9-13 above, and further in view of Clark (US 2773790).

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23. Regarding claims 9-11, one of ordinary skill in the art would appreciate that the resins can be in powder form and when mixed with water can also be in liquid form, as discussed above. In any event, Clark discloses a hard molded board and teaches that it is preferred to make use of a resinous binder of the thermosetting type such as phenol formaldehyde, urea formaldehyde, melamine formaldehyde and the like and to make use of such binders in dry powder form which clings to the wooden wafers in the desired concentration, but it will be understood that such resinous materials may be used in liquid form as well (col. 4, lines 61-68).

24. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the resinous binders in powder or liquid form since both forms are effective as a binding agent as taught by Clark.

25. Claims 9-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Reif as applied to claims 1-3, 5-6, and 9-13 above, and further in view of Clark (US 2773790).

26. Regarding claims 9-11, one of ordinary skill in the art would appreciate that the resins can be in powder form and when mixed with water can also be in liquid form, as discussed above. In any event, Clark discloses a hard molded board and teaches that it is preferred to make use of a resinous binder of the thermosetting type such as phenol formaldehyde, urea formaldehyde, melamine formaldehyde and the like and to make use of such binders in dry powder form which clings to the wooden wafers in the desired concentration, but it will be understood that such resinous materials may be used in liquid form as well (col. 4, lines 61-68).

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27. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the resinous binders in powder or liquid form since both forms are effective as a binding agent as taught by Clark.

28. Claims 4 and 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Shisko as applied to claims 1-3, 5-6, and 9-13 above, and further in view of Chapman (US 3011938).

29. Regarding claims 4 and 14-16, Shisko teaches adhesives and binders such as UF, PF, and isocyanate, inter alia, but do not expressly teach natural adhesives, at least one of a protein product or starch-bearing product.

30. Chapman discloses a process of making board products. Chapman teaches protein glues such as wheat flour and soybean flour are the most satisfactory natural adhesives (col. 5, lines 68-69).

31. It would have been obvious to one of ordinary skill in the art at the time of the invention to use natural adhesives such as those taught by Chapman since other adhesives may be largely absorbed by the moist wood particles as soon as applied thereto, as taught by Chapman (see col. 5, lines 60-62).

32. Claims 4 and 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Reif as applied to claims 1-3, 5-6, and 9-13 above, and further in view of Chapman.

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33. Regarding claims 4 and 14-16, Reif teaches adhesives and binders such as UF, PF, and isocyanate, inter alia, but do not expressly teach natural adhesives, at least one of a protein product or starch-bearing product.

34. Chapman discloses a process of making board products. Chapman teaches protein glues such as wheat flour and soybean flour are the most satisfactory natural adhesives (col. 5, lines 68-69).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to use natural adhesives such as those taught by Chapman since other adhesives may be largely absorbed by the moist wood particles as soon as applied thereto, as taught by Chapman (see col. 5, lines 60-62).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LEE whose telephone number is (571)270-7711. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. L./

Examiner, Art Unit 1791

/KAT WYROZEBSKI/

Supervisory Patent Examiner, Art Unit 1791